Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 2, 22, 24, 27,	)	WT Docket No. 10-4
90 and 95 of the Commission's Rules	)	
to Improve Wireless Coverage Through	)	
the Use of Signal Boosters	)	

To: The Commission

COMMENTS OF WILSON ELECTRONICS, INC.

Wilson Electronics, Inc. ("Wilson"), by its attorney and pursuant to § 1.415(a) of the Commission's rules ("Rules"), hereby submits its comments in response to the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding.[1]

INTRODUCTION

Wilson has long recognized that industry collaboration was an imperative if the Commission was to adopt rules to foster the development and deployment of consumer-installed signal boosters that would enhance wireless network coverage without harming network performance.[2] Wilson's efforts to reach a consensus with wireless carriers on technical issues began in earnest in January 2008, but were initially unsuccessful.[3] That led Wilson to petition the Commission in November 2009 to initiate a rulemaking to establish standards for the

[1] *See Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, 26 FCC Rcd 5490 (2011) ("*NPRM*").

[2] Wilson is a leading manufacturer of signal amplification devices. It was founded in 1999 by James W. Wilson, a 40-year veteran of the wireless industry. Wilson began manufacturing cellular antennas and expanded into cellular amplifiers in 2002. It is headquartered in St. George, Utah and currently employs approximately 200 people, including a dozen engineers.

[3] *See* Petition for Rulemaking of Wilson Electronics, Inc., WT Docket No. 10-4, at 11 n.39 (Nov. 3, 2009) ("Wilson Petition").

certification of signal boosters.[4]

Despite the vigorous and even contentious debate that followed the filing of its rulemaking petition, Wilson continued to reach out to wireless carriers in the hope that a technical compromise could be reached on signal boosters that would be acceptable to manufacturers and the wireless industry. The prospect of such a compromise appeared hopeless until the *NPRM* was released. The regulatory framework that the Commission proposed was intended in part to foster collaboration between carriers and manufacturers,[5] but the announcement of the Commission's proposal proved sufficient to engender collaboration. The *NPRM* prompted Verizon Wireless to initiate discussions with Wilson[6] that successfully culminated today with the submission of their joint proposal ("Joint Proposal") to resolve the technical issues raised by the Commission.[7]

Wilson commends the Commission for taking what Commissioner Clyburn correctly called a "thoughtful and comprehensive approach" to facilitating the development and deployment of well-designed signal boosters.[8] Wilson believes that its collaboration with Verizon Wireless was only possible because the regulatory framework for signal boosters was

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[4] *See* Wilson Petition, at 10-17.

[5] *See NPRM*, 26 FCC Rcd at 5491 (¶ 2) ("The regulatory framework proposed in this *NPRM* seeks to create appropriate incentives for carriers and manufacturers to collaboratively develop robust signal boosters that do not harm wireless networks").

[6] *See* Joint Motion for Extension of Time, WT Docket No. 10-4, at 1 (June 16, 2011).

[7] *See* Letter from John T. Scott, III, Andre J. Lachance and Russell D. Lukas to Marlene H. Dortch, WT Docket No. 10-4 (July 25, 2011) ("Joint Letter"). The Joint Proposal is memorialized in two documents prepared by V-COMM, a wireless engineering consulting firm, which are appended to the Joint Letter. *See* Sean Haynberg & David Hunt, *Consumer Booster Specification for CMRS Spectrum Bands* (July 25, 2011) ("*Consumer Booster Proposal*"); Sean Haynberg & David Hunt, *Industry Certified Signal Booster Program* (July 25, 2011) ("*CEO Booster Proposal*").

[8] *NPRM*, 26 FCC Rcd at 5544.

skillfully constructed by the Commission to evenly balance the interests of consumers, manufacturers and carriers. And, of course, Verizon Wireless is to be commended for its efforts in working with Wilson to fashion the Joint Proposal to serve those same interests.[9]

The Joint Proposal obviously does not represent an industry consensus on the technical requirements for "robust signal boosters that do not harm wireless networks."[10] However, it does detail the technical requirements that Verizon Wireless and Wilson agree should be imposed on the manufacture of CMRS signal boosters to prevent harm to wireless networks. Considering the level of the concerns Verizon Wireless expressed in this proceeding about the network harms caused by signal boosters,[11] the Joint Proposal is tantamount to a consensus proposal. If the technical specifications in the Joint Proposal have been deemed sufficient by Verizon Wireless to protect its CMRS networks, they should be deemed sufficient to protect all CMRS networks.

Wilson is proud of the Joint Proposal and fully supports its adoption by the Commission. At this juncture, Wilson is content to allow the Joint Proposal to largely speak for itself. It will direct its comments to two significant matters that are discussed in the *NPRM* but not addressed by the Joint Proposal.

DISCUSSION

I. THE USE OF SIGNAL BOOSTERS SHOULD BE LICENSED BY PART 95 RULES PURSUANT TO § 307(e) OF THE ACT

Wilson initially asked the Commission to amend Part 20 of the Rules to establish

[9] Wilson wishes to particularly acknowledge Richard L. Harvey, Principal Member of Technical Staff – Verizon Network and Technology, and Edmond J. Thomas, Wiltshire & Grannis LLP, for their collaborative work on the Joint Proposal.

[10] *NPRM*, 26 FCC Rcd at 5491 (¶ 2).

[11] *See* Letter from Tamara Priess to Marlene H. Dortch, WT Docket No. 10-4, at 1 (Mar. 29, 2011); Reply Comments of Verizon Wireless, WT Docket No. 10-4, at 2-4, 7-10 (Mar. 8, 2010); Comments of Verizon Wireless, WT Docket No. 10-4, at 5-8, 14-19 (Feb. 4, 2010).

standards for the certification of signal boosters for subscriber use in the CMRS.[12] That approach called on the Commission to employ the so-called "blanket" licensing scheme under which individual subscribers could operate certified signal boosters under § 1.903(c) of the Rules and the auspices of the authorizations held by the licensees that are providing the underlying wireless services. Wilson quickly learned that its proposed blanket licensing approach engendered controversy regarding the licensee's authority to control access to its wireless network.[13] As we will discuss, that controversy will be avoided by the adoption of the Commission's proposal to license the use of signal boosters by rule under § 307(e) of the Act.[14] Thus, Wilson now finds the Commission's license-by-rule proposal to be infinitely preferable to its own.

The Commission has explicit statutory authority under § 307(e) of the Act to adopt a rule that authorizes the operation of "radio stations" without individual licenses in the Citizens Band Radio Services.[15] Moreover, § 307(e)(3) appears to give the Commission unbridled rulemaking authority to define the term "citizens band radio service" to include new services.[16] Therefore, Wilson agrees that the Commission has the statutory authority to amend Part 95 of its Rules to authorize the operation of signal boosters without individual licenses in a new Citizens Band

[12] *See* Wilson Petition, at 1 & Attach. 1.

[13] *See* Reply Comments of AT&T, Inc., WT Docket No. 10-4, at 15-32 (Mar. 8, 2010); Letter from M. Robert Sutherland to P. Michele Ellison, WT Docket No. 10-4, at 2-8 (Feb. 2, 2010); Comments of AT&T, Inc., WT Docket No. 10-4, at 3-5, 8-11 (Feb. 5, 2010).

[14] *See NPRM*, 26 FCC Rcd at 5501-02 (¶¶ 29-32).

[15] *See* 47 U.S.C. § 307(e)(1). *See also NPRM*, 26 FCC Rcd at 5501 (¶ 29). A "radio station" is "a station equipped to engage in radio communication or radio transmission of energy." 47 U.S.C. § 153(35).

[16] *See* 47 U.S.C. § 307(e)(3) ("For purposes of this subsection, the term[] 'citizens band radio service' … shall have the meaning[] given [it] by the Commission by rule").

Radio Service — the Signal Booster Radio Service.[17]

The Commission's proposal to license signal boosters by the promulgation of new Part 95 rules is best suited to implement the regulatory framework suggested by the Joint Proposal. Whereas the regulatory framework proposed in the *NPRM* distinguishes "fixed" signal boosters from "mobile" signal boosters,[18] the Joint Proposal would create three classifications of signal boosters: (1) Consumer Boosters, which are low-powered fixed and mobile signal boosters that can be purchased, installed and used by CMRS consumers;[19] (2) Certified Engineered and Operated ("CEO") Boosters, which are higher-powered fixed signal boosters designed for large offices, campuses, and similar installations that require professional installation and close carrier coordination;[20] and (3) Carrier Installed ("Carrier") Boosters, which are fixed or mobile signal boosters installed by CMRS licensees to operate exclusively on their authorized frequencies.[21] Licensing by rule is the most practical licensing scheme that will allow the Commission to prescribe technical requirements and operating parameters that will balance the interests of consumers and the potential for network interference with respect to each of the three

[17] *See NPRM*, 26 FCC Rcd at 5531-32 (¶¶ 15 & 16).

[18] *See id*. at 5507-09 (¶¶ 47-54), 5534 (proposed §§ 95.1619 & 95.1623(c)).

[19] A Consumer Booster is defined as "a bi-directional RF amplifier with associated antenna systems that transmits and receives signals on uplink and downlink CMRS spectrum bands using an outdoor antenna for transmission and reception to CMRS base station(s) and an indoor or in-vehicle antenna, or direct connection, to enhance service for CMRS mobiles." *Consumer Booster Proposal*, at 1. A Consumer Booster can be considered a type of "consumer signal booster" as that term is defined in the *NPRM*. *See* 26 FCC Rcd at 5491 n.3.

[20] A CEO Booster is defined as "a bi-directional RF amplifier that transmits and receives signals using an outdoor 'donor' antenna oriented to a nearby serving CMRS base station and uses an indoor 'server' antenna to enhance CMRS coverage indoors. The antenna systems may be distributed via coaxial cable or fiber." *CEO Booster Proposal*, at 1.

[21] *See* Joint Letter, at 1. Carrier Boosters need not be subject to the requirements of either the *Consumer Booster Proposal* or the *CEO Booster Proposal*, since no carrier would install a booster that could harm its own network by operating on its own frequencies.

classifications of signal boosters.

We start with the obvious fact that individual licensing is not an option. The Commission has repeatedly found that individual licensing is costly to the public and administratively burdensome to the Commission.[22] Moreover, the Commission abolished licensing of individual mobile units in most wireless services in 1980, and there is no reason to resurrect the scheme to license mobile Consumer Boosters or Carrier Boosters.[23] For example, it would be senseless to individually license mobile Consumer Boosters that are used in conjunction with CMRS handsets that are operated under the blanket authority of the CMRS provider's license.[24]

A blanket licensing scheme, under which the wireless network operator is the sole licensee, works well when the operator controls system design and access while the licensing process allows the Commission to control the use of the spectrum, identify the rights of the individual users, and avoid interference.[25] Thus, blanket licensing would be antithetic to the fundamental compromise on which the Joint Proposal is based. Verizon Wireless effectively agreed to provide network access to Consumer Boosters in return for Wilson's agreement to manufacture Consumer Boosters subject to stringent specifications designed to prevent network

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[22] *See Amendment of Parts 2 and 95 of the Commission's Rules to Establish a Medical Implant Communications Service in the 402-405 MHz Band*, 14 FCC Rcd 21040, 21044 (1999); *Amendment of Parts 80 and 87 of the Commission's Rules to Permit Operation of Certain Domestic Ship and Aircraft Radio Stations Without Individual Licenses*, 11 FCC Rcd 14849, 14849 (1996); *Amendment of Part 95 of the Commission's Rules to Establish a Very Short Distance Two-Way Voice Radio Service*, 11 FCC Rcd 12977, 12983 (1996); *Amendment of Parts 1 and 95 of the Commission's Rules to Eliminate Individual Station Licenses in the Radio Control (R/C) Radio Service and the Citizens Band (CB) Radio Service*, 48 Fed. Reg. 24884, 24887 (1983).

[23] *See Individual Radio Licensing Procedures*, 77 F.C.C. 2d 84, 85-87 (1980). *See also Amendment of Part 22 of the Commission's Rules to Benefit the Consumers of Air-Ground Telecommunications Services*, 18 FCC Rcd 8380, 8391 (2003).

[24] *See* 47 C.F.R. § 1.903(c).

[25] *See Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*, 19 FCC Rcd 24558, 24593 (2004) ("*UWB Order*").

harm. To authorize the use of Consumer Boosters under a blanket licensing scheme would unnecessarily make their network access subject to the carrier's license and, by operation of law, its control. In that event, Wilson and the CMRS consumers in whose interests it negotiated would be denied the network access for which it bargained.

Wilson's willingness to support the Joint Proposal was premised on the Commission's adoption of the § 307(e) licensing-by-rule scheme proposed in the *NPRM*. Under such a scheme, "communications services may be provided without any Commission review of the provider or the specific operation that the provider intends to provide. Rather, the Commission adopts a set of rules that prescribe parameters of operation, and anyone may operate the service in any manner within those parameters."[26] That scheme appeared perfectly tailored to provide Consumer Boosters with unfettered network access specifically. Under the proposed Part 95 regulatory framework, any CMRS subscriber could be authorized to operate a Consumer Booster that has been certificated under Part 2 of the Rules for use in the Signal Booster Radio Service in accordance with the stringent technical specifications set forth in the *Consumer Booster Proposal*.

Finally, considering the breadth and detail of its technical and operational requirements, the *Consumer Booster Proposal* would be most effectively accommodated in new Subpart M of Part 95. Both from a regulatory and practical standpoint, the requirements for operating Consumer Boosters should be consolidated in Part 95, rather than as currently scattered among the provisions of Parts 1, 22, 24 and 27.[27] At the very least, licensing Consumer Boosters by Part 95 rules will provide easy access to, and a clear understanding of, the requirements for the

[26] *UWB Order*, 19 FCC Rcd at 24594.

[27] The Commission will note that the Joint Proposal is not intended to apply to signal boosters that operate under Part 90. *See Consumer Booster Proposal*, at 1.

manufacturing, marketing, installation, and operation of such boosters.

II. THE COMMISSION SHOULD GRANDFATHER CURRENTLY DEPLOYED SIGNAL BOOSTERS AND ADOPT ITS PROPOSED TRANSITION PLAN

The Commission posed the question in its *NPRM* of whether it should sunset or grandfather the signal boosters that are currently in use but will not satisfy the stringent technical requirements that will be adopted in this proceeding.[28] Wilson submits that the Commission effectively answered its own question at the outset of its *NPRM* when it announced its finding that "[t]he public interest is best served by ensuring that consumers have access to well-designed boosters that do not harm wireless networks."[29]

The record now establishes that there are well-designed signal boosters currently in use that have, in fact, "empower[ed] consumers in rural and underserved areas to improve their wireless coverage"[30] and have done so without harming wireless networks. For example, Wilson has been manufacturing mobile signal boosters since 2009 that meet most of the technical requirements contemplated by the *NPRM*.[31] CMRS subscribers who purchased those Wilson signal boosters should not be deprived of the "substantial public benefits"[32] that they currently

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[28] *See NPRM*, 26 FCC Rcd at 5513 (¶ 62).

[29] *Id.* at 5491 (¶ 2).

[30] *Id.* (¶ 1).

[31] Since at least 2009, Wilson's mobile signal boosters have complied with 47 C.F.R. §§ 22.355, 22.913, 22.917, 24.232, 24.238 & 27.50. Accordingly, those signal boosters could meet the certification requirements of proposed § 95.1611(b). *See NPRM*, 26 FCC Rcd at 5533. Over the past two years, Wilson's mobile signal boosters have come with (1) integrated oscillation detection technology which automatically deactivates the uplink transmitter within milliseconds of the onset of oscillations, and (2) an integrated downlink power detection feature that automatically deactivates the uplink transmitter when in close proximity to the base station. Hence, those already-deployed mobile signal boosters provide the interference safeguards that would satisfy the requirements of proposed § 95.1623(b) & (c). *See id*. at 5534.

[32] *NPRM*, 26 FCC Rcd at 5502 (¶ 31). The Commission effectively found in its *NPRM* that currently deployed, well-designed mobile signal boosters have: (1) empowered consumers in rural and underserved areas to improve their wireless coverage "when they travel by car,

enjoy, simply because their non-interfering signal boosters fall into non-compliance with Commission requirements. To sunset such signal boosters would be the regulatory equivalent of "throwing the baby away with the bath water."

Wilson estimates that there are over 1,000,000 unregistered signal boosters in use today. There are no available means by which a significant number of those who currently use signal boosters can be identified, much less located and notified that their use of the devices must cease by a sunset date announced by the Commission. Considering the near impossibility of effectively sunsetting the use of signal boosters, the Commission should opt instead to grandfather existing signal boosters and rely on interference remedies and market forces to effectively sunset the grandfathered equipment. Such reliance would be reasonable, since the Commission can expect manufacturers like Wilson to continue replacing any existing signal boosters that are found to be interfering with CMRS networks, and the agency can count on manufacturers and CMRS carriers to aggressively market new Consumer Boosters, CEO Boosters and Carrier Boosters to existing users as well as new customers.

Finally, Wilson fully supports the Commission's proposed two-step plan to provide for a quick transition to signal boosters that meet its new safeguards.[33] To ensure that its proposed timeframes are reasonable, the Commission should expedite this rulemaking so that the new Part 95 rules that are necessary to implement the Joint Proposal are in effect by the end of this year.[34]

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recreational vehicle, or boat;" (2) mitigated the "coverage gaps [that] exist within and at the fringes of [wireless] service areas and continue to pose a problem for residents, businesses, public institutions, visitors, and public safety first responders, particularly in rural areas;" and (3) "provide[d] public safety benefits, for example, by enabling the public to connect to 911 in areas where wireless coverage is deficient or where an adequate communications signal is blocked or shielded." *Id*. at 5491 (¶ 1).

[33] *See NPRM*, 26 FCC Rcd at 5513 (¶ 63).

[34] *See* Joint Letter, at 3.

CONCLUSION

Wilson expended substantial post-*NPRM* effort in the formulation of the Joint Proposal. Consequently, it feels that it deserves the luxury of relying on Verizon Wireless to proffer an extensive set of comments that contains a clear and detailed explanation of the Joint Proposal and makes a persuasive case for its adoption by the Commission. Wilson stands ready to bolster that case at the reply stage should additional support for the Joint Proposal appear necessary. In any event, Wilson urges the Commission to adopt the Joint Proposal as representing the most effective regulatory strategy for facilitating the development and deployment of robust signal boosters that pose no harm to CMRS networks.

Respectfully submitted,

RUSSELL D. LUKAS
LUKAS, NACE, GUTIERREZ & SACHS, LLP
8300 Greensboro Drive, Suite 1200
McLean, Virginia 22102
(703) 584-8660
rlukas@fcclaw.com

Attorney for Wilson Electronics, Inc.

July 25, 2011

CERTIFICATE OF SERVICE

I, Russell D. Lukas, hereby certify that on this 25th day of July 2010, copies of the foregoing COMMENTS OF WILSON ELECTRONICS, INC. were transmitted by e-mail, in pdf format, to the following:

Roger Noel, Chief
Mobility Division
Wireless Telecommunications Bureau
roger.noel@fcc.gov

Joyce Jones
Mobility Division
Wireless Telecommunications Bureau
joyce.jones@fcc.gov

John T. Scott, III
Verizon Wireless
john.scott@verizonwireless.com

Andre J. Lachance
Verizon Wireless
andy.lachance@verizonwireless.com

Best Copy and Printing, Inc.
FCC@BCPIWEB.COM

_____
Russell D. Lukas